

ABSTRACT

A pre-alloyed stabilized zirconia powder suitable for use in thermal barrier applications is formed by alloying zirconia with a stabilizer, such as yttria, and processing the alloyed stabilized zirconia to form a very fine powder. The raw powder is then spray-dried to produce an agglomerated powder having an average particle size suitable for use in spray coating applications. The resulting powder can be used in a thermal-spray application to produce a porous thermal barrier coating having a substantially decreased thermal conductivity when compared to conventional TB coatings, such those produced using plasma-densified powders.